



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

C45-C
Job Sheet 183413



Part No: C45-C

Job Qty: 1 ea

Part Name: Single Cage Assembly (C45 & C60 Hook)



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 9/18/18

Job Tracking No:

Due Date: 9/21/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: C45-C rev.4 IPP REV:A 18.01.22 NEW ISSUE DD VERF:DP

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		9/21/18	0.00	0.00	Start Up Small Fab-1		
100	Small Fab	1 pcs		9/21/18	0.00	0.50	Small Fab-9		
120	QC	1 pcs		9/21/18	0.00	0.00	QC5		
140	Packaging	1 pcs		9/21/18	0.00	0.00	Packaging3-1		
160	QC21-SA	1 Ea		9/21/18	0.00	0.00	QC21		

Part Op 100 - ASSEMBLE AS PER DWG ***HAND TIGHTEN ALL BOLTS, SPREAD COTTER PIN JUST ENOUGH SO THAT IT
Descriptions: WILL NOT FALL OUT***

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
AN8-23A	Bolt	2 Ea (2 ea)	90-Start up Operation	5084131
AN12H32	Bolt <i>replace C45-15-2</i>	1 pcs (1 ea)	100-Small Fab	5097920
C45-15-10	Ford Bumper	1 Ea (1 ea)	100-Small Fab	5084778
C45-15-11	Nut, Cage Bumper	1 Ea (1 ea)	100-Small Fab	5036837
C45-15-3	Lifting Bolt Castle Nut	1 pcs (1 ea)	100-Small Fab	5036834
C45-15-6	Bushing, Lifting	1 Ea (1 ea)	100-Small Fab	5067717
C45-15-7	Washer, Lifting Bolt	5 pcs (4 ea)	100-Small Fab	5036835 x 3 5116474
C45-18-7	Shim	4 Ea (4 ea)	100-Small Fab	5054305
C45-19C	Weldment	1 Ea (1 ea)	100-Small Fab	5110677
MS21044-N8	NUT, SELF LOCK 0.500-20, UNJF-3B replaced by MS21044N8	2 Ea (2 ea)	100-Small Fab	5084100
MS24665-363	Cotter Pin	1 Ea (1 ea)	100-Small Fab	5092509
NAS1149C0663R	Washer	1 Ea (1 ea)	100-Small Fab	Em134573-15
NAS1149F0863P	Washer	4 Ea (4 ea)	100-Small Fab	5058169

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	AN8-23A	2	50	0
100-Small Fab	AN12H32	1	0	0
	C45-15-10	1	5	0
	C45-15-11	1	81	0
	C45-15-3	1	2	0
	C45-15-6	1	8	0
	C45-15-7	4	2	0
	C45-18-7	4	48	0

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐								
		OTHER :							

C45-19C	1	1	0
MS21044-N8	2	4	0
MS24665-363	1	96	0
NAS1149C0663R	1	595	0
NAS1149F0863P	4	806	0

Part Specifications

Specifications could not be found.

Plex 9/18/18 6:49 AM Dart.lajeunesse.marie

DART
AEROSPACE

Container No: S111784



Part: C45 - C

Job No: 183413

Serial No/Batch: S111784

Revision: 4

Inspector:

Exp Date:

Instructions:

1510 PINEBUSH AVENUE
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 09/20/18

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor Approval Verification
					QC / QA Coordinator Approval
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

DQA: _____ Date: 28/09/18**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____

Date: _____

Work Order update only ☐

Work Order: <u>183413</u> Part No. <u>C45-C</u> NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																													
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																																																																																
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																																																																																
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																																																																																
Large Fab ☐	Composite ☐	Supplier ☐																																																																																	
Date : _____		Step #: _____		QTY Effective : _____		MRB (QSI042) Approval JUNE 27, 2018																																																																													
Description Work Order Deviation				Disposition																																																																															
- C45-15-2 McMaster#91257A879 modified bolt has been replaced with AN12H32 purchase bolt (no modification required) <u>15x5097920</u> - Cotter Pin p/n C45-15-9 (1) has been replaced with MS24665-363 - Lock Washer P/N C45-15-12 (1) has been replaced with SS Flat Washer NAS1149C0663R - PER VM				- This deviation is acceptable. - The AN12 bolt is sufficiency strong for its intended application - No impact on fit, form or function. - The Cotter Pin must be changed in conjunction with the AN12H32 Bolt. - All fasteners must be in safety (1-3 threads exposed) use additional washers if necessary 				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																																											
Root Cause <table style="width:100%;"> <tr><td>Environment</td><td>☐</td><td>No Re-verification</td></tr> <tr><td>Design</td><td>☐</td><td>Operator</td></tr> <tr><td>Doc/Data</td><td>☐</td><td>Offset/Setup</td></tr> <tr><td>Equip/Tooling</td><td>☐</td><td>Supplier</td></tr> <tr><td>Handling/Pre</td><td>☐</td><td>Training</td></tr> <tr><td>Material</td><td>☐</td><td>Use for Testing</td></tr> <tr><td>Internal Transport</td><td>☐</td><td>Poor Information</td></tr> <tr><td>Tribal Knowledge</td><td>☐</td><td>Rushing</td></tr> <tr><td>LOA</td><td>☒</td><td>Product Improvement</td></tr> <tr><td>Substation</td><td>☐</td><td>Process Improvement</td></tr> <tr><td>Past Expiry Date</td><td>☐</td><td>Manufacturing Process</td></tr> <tr><td>Misidentified</td><td>☐</td><td>Past Due</td></tr> </table>		Environment	☐	No Re-verification	Design	☐	Operator	Doc/Data	☐	Offset/Setup	Equip/Tooling	☐	Supplier	Handling/Pre	☐	Training	Material	☐	Use for Testing	Internal Transport	☐	Poor Information	Tribal Knowledge	☐	Rushing	LOA	☒	Product Improvement	Substation	☐	Process Improvement	Past Expiry Date	☐	Manufacturing Process	Misidentified	☐	Past Due	FAULT CATEGORY <table style="width:100%;"> <tr> <td>Pressure/Forced</td> <td>Temperature/Cure</td> <td>Power Loss/Surge</td> <td>Positioned Wrong</td> </tr> <tr> <td>Bending</td> <td>Set-up</td> <td>Folio/Program</td> <td>Outside Dimensions</td> </tr> <tr> <td>Centre Not Concentric</td> <td>BOM/Route</td> <td>Grain</td> <td>Over/Under tolerance</td> </tr> <tr> <td>Cracks</td> <td>Broken/Damage/Defect</td> <td>Weld</td> <td>Part Incorrect</td> </tr> <tr> <td>Crimp/Kink/Ripple/Wave</td> <td>Inspection Incomplete/Unqualified</td> <td>Wrong Stock Pulled</td> <td>Part Lost/Missing</td> </tr> <tr> <td>Cuffs</td> <td>Contamination</td> <td>Out of Sequence</td> <td>Part Moved</td> </tr> <tr> <td>Crushing</td> <td>Countersink</td> <td>Off-set</td> <td>Drawing</td> </tr> <tr> <td>Heat Treat</td> <td>Cut Too Short</td> <td>Mislabeled</td> <td>Finish</td> </tr> <tr> <td>Wave/Twist in Tube</td> <td>Instructions Incomplete/Unclear</td> <td>Fit/Function</td> <td>Misread</td> </tr> <tr> <td>Marks/Chatter</td> <td>Drill Holes</td> <td>Misaligned/off center</td> <td>Turning Sequence</td> </tr> </table>						Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong	Bending	Set-up	Folio/Program	Outside Dimensions	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance	Cracks	Broken/Damage/Defect	Weld	Part Incorrect	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing	Cuffs	Contamination	Out of Sequence	Part Moved	Crushing	Countersink	Off-set	Drawing	Heat Treat	Cut Too Short	Mislabeled	Finish	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence
Environment	☐	No Re-verification																																																																																	
Design	☐	Operator																																																																																	
Doc/Data	☐	Offset/Setup																																																																																	
Equip/Tooling	☐	Supplier																																																																																	
Handling/Pre	☐	Training																																																																																	
Material	☐	Use for Testing																																																																																	
Internal Transport	☐	Poor Information																																																																																	
Tribal Knowledge	☐	Rushing																																																																																	
LOA	☒	Product Improvement																																																																																	
Substation	☐	Process Improvement																																																																																	
Past Expiry Date	☐	Manufacturing Process																																																																																	
Misidentified	☐	Past Due																																																																																	
Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong																																																																																
Bending	Set-up	Folio/Program	Outside Dimensions																																																																																
Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance																																																																																
Cracks	Broken/Damage/Defect	Weld	Part Incorrect																																																																																
Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing																																																																																
Cuffs	Contamination	Out of Sequence	Part Moved																																																																																
Crushing	Countersink	Off-set	Drawing																																																																																
Heat Treat	Cut Too Short	Mislabeled	Finish																																																																																
Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread																																																																																
Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence																																																																																
		OTHER : _____																																																																																	